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importance in the production of new garden varieties (no less than 300 of such origin being grown at present in this country); and that it is of the same fundamental nature as seed variation. The key to this is to be found in the sentence, "The truth is . . . that every branch or phyton is a bud variety, differing in greater or lesser degree from all other phytons on the same plant."

But the book must be read to be appreciated. There are too many fruitful ideas to permit discussion of them in detail. We have further space only to quarrel with two.

We doubt whether the idea of the phyton, of which the author makes a point, is of any real value, morphologically or physiologically. Will not rather the idea of the shoot, whether primary, secondary, or of higher order, answer Professor Bailey's purpose better? That shoots as a whole, and the phytons taken from different shoots, are unlike every one knows. But do noteworthy differences exist between the successive internodes of a shoot? It is not unlikely that our author would assent to this change, for we find him saying on p. 250, "We are bound to look upon every branch as in some sense a distinct individual, since it is unlike every other branch." Yet recently we found the conception of the phyton about to be introduced into an elementary book on botany for horticultural students "because Professor Bailey uses it in his writings." Wherefore the query.

There is one essay which we think the author would have done a service either by omitting or by radically altering, the one on sex in fruits. Professor Bailey, in an earlier part of this volume, reprints his note from *Science* on the "Untechnical terminology of the sex relation in plants," and reasserts his conviction that the ascription of sex-relations to the sporophyte by the use of sex terms is "perfectly proper," and often necessary for perspicuity. Of course he is entitled to this opinion, in spite of the botanists who hold it to be erroneous. But can he justify the use of sex terms correctly and (as he himself acknowledges) incorrectly in the same essay? And can he permit himself to reason regarding the evolution of sex from premises that are not only false but that are incomparable, as he does on pp. 347-9? Can such reasoning lead to "a perspicuous treatment of the subject"? We feel sure that when Professor Bailey gives this matter the consideration it deserves he will be as unwilling to have his philosophy shut in by the garden fence as he is desirous that botanists should not have theirs stop at it.—C. R. B.

MINOR NOTICES.

WE HAVE just received separates of two papers from the Transactions of the Kansas Academy of Science for 1893-4, one on the Erysipheæ of Riley county, Kansas, by Lora L. Waters, and the other a list of the grasses of Kansas, by Professor A. S. Hitchcock.

MR. C. J. ELMORE reviews¹ the several systems of classification of the diatoms, favoring Petit's as approaching "most nearly to a natural one, because based on characters having a physiological significance," viz., on the structure of the endochrome and the mode of forming auxospores. In higher plants these are unstable characters; are they not likely to be so also in the diatoms?

FOR SOME TIME before his death, Professor D. C. Eaton had been preparing to issue a set of *Sphagna* in collaboration with Mr. Edwin Faxon. That work has now been completed by Mr. Faxon, and a set of 172 specimens, representing 39 species, their varieties and forms, has been issued by Mr. Geo. F. Eaton with the title *Sphagna Boreali-Americana Exsiccata*. Most of the determinations are by Warnstorf, and no pains have been spared to make the set first-class in every particular. Those who already know the beauty of specimens prepared by Mr. Faxon need not be assured that these are fine and abundant. For the credit of American bryology it is only just to say that no previous issue of moss exsiccata anywhere to our knowledge surpasses this one in the abundance and beauty of the specimens or in careful labeling. Sixty sets will be issued at \$15 per set.—C. R. B.

IN HIS ADDRESS upon "grasses," before the Massachusetts Horticultural Society last March, Mr. F. Lamson-Scribner gave a brief account of the uses, form, structure, and distribution of grasses, and then discussed the economic grasses of Massachusetts, concluding with a short statement of the work of the division of agrostology.

As a part of this work we note the recent issue of a bulletin (No. 3) upon useful and ornamental grasses of all countries. In the introduction a number of the most important economic grasses are classified according to their uses, while the body of the bulletin enumerates about 375 species, illustrated by eighty-nine figures, with a short account of their qualities, value, and culture. The compilation is a very useful one.

NOTES FOR STUDENTS.

A LIST of parasitic fungi, occurring in the state of Mississippi, supplementary to the one printed in May 1895 (Miss. bulletin no. 34), has been issued from the Mississippi Experiment Station (Bull. no. 38) by S. M. Tracy and F. S. Earle. It adds 85 species to the former list, of which 21 are new to science. The descriptions of the new species have also been published in the *Bulletin of Torrey Botanical Club* for May of this year. *Cercospora flexuosa* Tracy & Earle, and *C. Diospyri ferruginea* Atkinson, are reduced to synonyms of *C. Diospyri* Thümen, the three names having been applied to different stages of growth of the same fungus.—J. C. A.

¹ American Naturalist 30: 529-536. 1896.